

## CLAIMS

1. A semiconductor wafer protection structure,  
comprising a semiconductor wafer and a protective sheet  
5 overlaid on a circuit surface of the semiconductor wafer,  
wherein the protective sheet has a larger diameter than the  
outer diameter of the semiconductor wafer.

2. A semiconductor wafer protection structure,  
10 comprising a semiconductor wafer and a laminated protective  
sheet overlaid on a circuit surface of the semiconductor wafer,  
wherein the laminated protective sheet comprises a first  
protective layer having substantially the same size as the  
outer diameter of the semiconductor wafer and a second  
15 protective layer laminated on the first protective layer and  
having an outer diameter that is equal to or larger than the  
outer diameter of the first protective layer, and the laminated  
protective sheet is overlaid on the circuit surface via the  
side of the first protective layer.

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3. The semiconductor wafer protection structure  
according to claim 1 or 2, wherein the protective sheet or the  
laminated protective sheet has a maximum diameter that is  
larger than the outer diameter of the semiconductor wafer by

+0.1 to 10 mm.

4. The semiconductor wafer protection structure according to claim 2, wherein the first protective layer has  
5 an outer diameter that is smaller than the outer diameter of the semiconductor wafer by -2.0 to 0 mm and the second protective layer has an outer diameter that is larger than the outer diameter of the semiconductor wafer by +0.1 to +2.0 mm.

10 5. The semiconductor wafer protection structure according to claim 2 or 4, wherein the first protective layer includes a film having a stress relaxation rate of at least 40% after 1 minute of 10% elongation, and the second protective layer includes a film having a value of Young's modulus x  
15 thickness of at least  $5.0 \times 10^4$  N/m.

6. A semiconductor wafer protection method,  
comprising overlaying a circuit surface of a semiconductor wafer with a protective sheet having a larger diameter than  
20 the outer diameter of the semiconductor wafer.

7. A semiconductor wafer protection method,  
comprising overlaying a circuit surface of a semiconductor wafer with a laminated protective sheet, wherein the laminated

protective sheet comprises a first protective layer having substantially the same size as the outer diameter of the semiconductor wafer and a second protective layer laminated on the first protective layer and having an outer diameter that is equal to or larger than the outer diameter of the first protective layer, and the laminated protective sheet is overlaid on the circuit surface via the side of the first protective layer.

8. The semiconductor wafer protection method according to claim 6 or 7, wherein the protective sheet or the laminated protective sheet has a maximum diameter that is larger than the outer diameter of the semiconductor wafer by +0.1 to 10 mm.

9. The semiconductor wafer protection method according to claim 7, wherein the first protective layer has an outer diameter that is smaller than the outer diameter of the semiconductor wafer by -2.0 to 0 mm and the second protective layer has an outer diameter that is larger than the outer diameter of the semiconductor wafer by +0.1 to +2.0 mm.

10. The semiconductor wafer protection method according to claim 7 or 9, wherein the first protective layer

includes a film having a stress relaxation rate of at least 40% after 1 minute of 10% elongation, and the second protective layer includes a film having a value of Young's modulus x thickness of at least  $5.0 \times 10^4$  N/m.

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11. A laminated protective sheet for semiconductor wafer comprising a first protective layer and a second protective layer, wherein the second protective layer has a larger outer diameter than that of the first protective layer.

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12. The laminated protective sheet for semiconductor wafer according to claim 11, wherein the second protective layer has an outer diameter that is larger than the outer diameter of the first protective layer by +0.1 to +4.0 mm.

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13. The laminated protective sheet for semiconductor wafer according to claim 11 or 12, wherein the first protective layer includes a film having a stress relaxation rate of at least 40% after 1 minute of 10% elongation, and the second protective layer includes a film having a value of Young's modulus x thickness of at least  $5.0 \times 10^4$  N/m.

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14. A process for processing a semiconductor wafer, comprising a step comprising backgrinding a semiconductor

wafer and applying an adhesive sheet to the ground surface while protecting the semiconductor wafer by the semiconductor wafer protection method of any one of claims 6 to 10..

- 5           15.    The process for processing a semiconductor wafer according to claim 14, comprising a further step comprising cutting off an outer peripheral portion of the adhesive sheet with a cutter in a manner such that the cutter is moved along an outer peripheral end surface of the protective sheet or the  
10   laminated protective sheet.